## That which is claimed is:

1. A baseband processing method based on smart antenna and interference cancellation for a communication system including one or more antenna units linked to one or more corresponding radio frequency transceivers which are linked to a bandbased processor, comprising the steps of:

A. obtaining sampled-data output signals from said antenna units and said corresponding radio frequency transceivers, estimating user channels based on said sampled-data output signals using a predetermined user training sequence, and obtaining user responses from said estimated user channels;

B. detecting useful symbolic level signals from said sampled-data output signals using smart antenna beam formation based upon said estimated user channels;

C. reconstructing the useful symbolic level signals, adding a scramble code, and then obtaining a chip level reconstructed signal;

D. subtracting the reconstructed signals from said sampled-data output signals; and

E. repeating steps B to D until recovering all user signals.

2. The method according to claim 1, wherein a channel estimation module estimates the user channels in step A and further said user responses are stored as a matrix, which is correlated to an individual user's training sequence and is calculated and stored beforehand.

3. The method according to claim 1, wherein step B further comprises:

estimating a power response for all users on all channels using a power estimation module;

calculating the main path and multipath power distribution for all users within a searching window;

sending the calculated power distribution to a signal generator to generate a signal; and

generating a signal by: calculating each user maximum peak value power position, storing the calculated peak value power position in a power point and obtaining de-spread results of all signals at the power point with a smart antenna algorithm.

4. The method according to claim 3, further comprising sending an adjustment parameter for synchronization to a transmitting module associated with a user its most powerful path is not at the same point of other users and which is not synchronized with a base station while calculating each user's maximum peak value power position.

5. The method according to claim 3, wherein step B further comprises:

sending the de-spread result to a signal/noise ratio estimation module and estimating a signal/noise ratio for all users;

repeating steps C, D, and E for users identified as having a low signal/noise ratio; and

outputting a signal result directly for users identified as having a high signal/noise ratio.

6. The method according to claim 5, wherein the step of estimating a user signal/noise ratio comprises:

calculating a user power;

determining whether the calculated user power is greater than a selected field value so as to determine whether the calculated user power is an effective power;

calculating the square difference for all signals having an effective power at their corresponding constellation map point; and

identifying those users having a low signal/noise ratio when the square difference value is greater than a preset value, and identifying those users having a high signal/noise ratio when their square difference less than said preset value.

7. The method according to claim 1, wherein step C comprises reconstructing the signals using a signal reconstructing module and calculating components of all user signals and multipaths on each antenna unit.

8. The method according to claim 1, wherein step D is executed using an interference cancellation module.

9. The method according to claim 1, wherein step E is executed using a decision module, until a number of interference cancellation loops reaches a preset number, which preset number is less than or equal to the length of a search window, at which time step E further comprises stopping interference cancellation and outputting the recovered signals.

10. The method according to claim 1, wherein step E is executed in a decision module, until the signal/noise ratio of all signals is greater than a predetermined field value, at which time step E further comprises stopping interference cancellation and outputting the recovered signals.

11. The method according to claim 1, wherein step E comprises repeating steps B to D for at most a number of times equal to the length of a searching window.